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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,842	01/11/2006	Jia-Ni Chu	W9643-02	3234

7590 07/31/2009

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EXAMINER	
MICALI, JOSEPH	

ART UNIT	PAPER NUMBER
1793	

MAIL DATE	DELIVERY MODE
07/31/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/564,842	CHU ET AL.	
	Examiner	Art Unit	
	Joseph V. Micali	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 June 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,11-14,17-20,23 and 24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,11-14,17-20,23 and 24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Application

Claims 1-7, 11-14, 17-20, and 23-24 are pending and presented for examination on the merit. The previous 112 rejections have been withdrawn in light of applicant's argumentation (addressed below under Response to Arguments).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-7, 11-14, 17-20, and 23-24 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over (1) WO 01/98201 or (2) 6,527,817 (Fang et al.).

With respect to claims 1-7, 11, 23-24 (similar abrasive compositions), claims 12-14 (similar abrasive slurries), and claims 17-20 (a method of using the similar abrasive compositions), the following is a rejection on such similarly written claims.

The WO reference teaches a polishing composition and polishing method, said composition comprises abrasive particles (colloidal silica) having a poly dispersed particle size distribution and water (**abstract and page 2, line 29 – page 4, line 9**). The standard deviation of the particles is also defined.

Fang et al. teaches a polishing composition and polishing method, said composition comprises 10-95 weight percent, based on the solids of abrasive particles (colloidal silica), wherein the abrasive particles have a poly dispersed particle size distribution and water (**abstract and column 2, line 62-column 4, line 2**). The standard deviation of the particles is also defined.

All of the references teach polishing compositions and polishing method, wherein the polishing composition comprises abrasive particles (colloidal silica) having a poly dispersed particle sizes distribution (size less that 100 nm). The size values of the references read on the claimed size of 15-100 nanometers, thus the claimed size is anticipated by the reference. With respect to the claimed span value, although the limitation "span value" is not literally defined, the broad disclosure of (1) the standard deviation and (2) the breath of the reference distributions

anticipate this limitation. With respect to the fraction of particles having the claimed maximum size (100 nm), all of the references teach abrasives which have a size less than 100 nm, thus the reference do not have to have sizes over 100 nm and therefore the fraction of particles can be zero (within the claimed range of "less than").

In the alternative, no patentable distinction is seen to exist because the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, see **In re Malagari, 182 U.S.P.Q. 549; In re Wertheim 191 USPQ 90 (CCPA 1976)**.

Response to Arguments

5. Applicant's arguments filed 6/6/09 have been fully considered but they are not persuasive.

With respect to the former indefinite rejection above, applicants argue that "by volume" indicates that the span values or particle sizes are measured by counting the volume of the particles and not the number of the particles. Though the examiner now understands what the applicant means and has removed the 112 rejection, the phrase "by volume" with regards to indicating the type of measurement, i.e. counting the volume of the particles, is not a patentable limitation, as it is not only a process limitation in a composition claim, but also does not patentably distinguish itself from the prior art.

With respect to the art rejections, applicants argue that the references do not disclose the span value. This is not persuasive because the span value defined by the instant invention is the "breath of the distribution" (distribution is of 20-100 nm) and the claims define the span as being

greater than 15 nm or even greater than 20 nm. As is apparent from the references, the size distribution of the abrasive particles is 15-100 nm (references teach the lower limit of 15 nm as is apparent from the WO reference on page 3, line 26 and in Fang (817) in column 3, line 30), thus as can be seen from the distribution of the references (distribution is 15-100 nm-this distribution has a breath of 100 nm - 15 nm = 85 nm), the span or breath of the distribution, as implied by the distribution of the references, can be a value of greater than or equal to 15 or 20 and applicants show no clear evidence to the contrary that a difference clearly exists.

Applicants present arguments that (1) the "distribution by number can be significantly different than the distribution by volume" and state that (2) one large particle would affect the distribution by volume but not by number. With respect to (1) above, although this may be true, applicants are not claiming a distribution **by volume**, but rather a "distribution with a median particle size by volume" and in the instant claims, the term "volume" is used to modify the median particle size and not the distribution, thus any arguments about the distribution by volume is not correct in view of the claims as drafted. In view of this, applicants are arguing limitations not claimed. With respect to (2) above, again applicants are not claiming a distribution by volume (at least, the claim does not clearly and specifically define this) and the last limitation of the instant claims do not exclude any large particles and furthermore applicants have not shown any evidence as to what they consider to be a large particle nor evidence that the references in fact contain large particles in the distribution. The examiner acknowledges that when percentage values are defined, the correlation between number and volume might be difficult to calculated since varying factors are needed (i.e. (depending on the size and density of the silica), however, applicants are not claiming any percentage values for the "median particle

size" or "the span value". It is to be noted that the "by number" limitation defined by the references is referring to the percentage values define therein and not to the particle sizes themselves. In view of applicant's arguments, they state that the references do not anticipate the claimed invention in view of the missing descriptive elements (i.e. apparently the span value). It is well understood that anticipation can be made if this would be an inherent feature in the references and as clearly established above, said span value is inherent to the distribution defined by the references. Again, applicants continue to argue that the references do not teach a particle size distribution defined by volume. As clearly pointed out above, the claims are not claiming a distribution by volume but rather a median particle size by volume. It would appear that applicants wording of the instant claims is not consistent with applicant's arguments. The only percentage value defined by the claimed invention is that particles having a size greater than about 100 nm is present in an amount of less than or equal to a certain percent by volume. This is not a clear distribution by volume. The fact that all the references teach abrasive particles (colloidal silica in both references) which have a size between 25-100 nm reads on the above limitation because the references do not have any median size over 100 nm and therefore the fraction of particles can be zero (within the claimed range of "less than"). In addition, the size distribution of the references must contain a volume of sizes and burden is upon applicants to show clear evidence as to why the distribution of the references would not constitute particles in the claimed relationship. Applicants have not clearly met this burden imposed upon them especially since the examiner has clearly defined reasons why the references teach the claimed distribution.

In the alternative rejection, applicants argue that that since the span value is not disclosed by the references, the examiner has failed to meet the burden of showing a prima facie case of obviousness. This examiner disagrees and specifically set forth reasons above why the claimed span value is met and now burden shifts to applicants to show evidence otherwise and this burden has not been met by applicants. Just because a reference might not literally define the claimed specific limitation does not exclude a rejection from being made if it can be clearly established why this limitation is inherent or suggested by other features in the reference. The examiner has clearly established reasons why the claimed "span value" is met and now applicants must show reasons to the contrary.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In summary, since no percentage values are defined and since the references all teach the exact claimed particle size distribution, a volume must inherently be associated therewith. The only specific volume percent value defined is for the particles above 100 nm and since the references are void of this size, the volume percent is zero which, reads on the claimed range.

The examiner also made a judgment that "the size distribution of the references must contain a volume of sizes and burden is upon applicants to show clear evidence as to why the distribution of the references would not constitute particles in the claimed volume relationship. It is the examiners position that from the data of the percentages for the individual abrasives, volume percents can be determined (depending on the size and density of the silica used which would appear to be the same), and this appears to encompass the claimed values. Applicants have not provided any clear evidence establishing that the claimed volume relationship is patentable over the number relationship of these references. Finally, the distribution of the references must have some volume associated therewith and applicants have not shown clear evidence as to why the distribution of the references will not meet the claimed volume limitation. Since all the particles of the references have the same size as the claimed invention, the volume must also be the same absent evidence to the contrary and since applicants do not define any numerical values for the volume". It is to be noted that applicants have failed to provide evidence rebutting this line of argument and thus no patentable distinction is seen to exist.

Finally, with regards to applicant's submitted declaration, examiner has found the declaration not persuasive for the following reasons:

(Points 1-6) do not address the rejections at hand;

(Point 7) merely defines the term "span value";

(Point 8) describes particle size distribution by number or by volume;

(Point 9) does not negate the teaching of Fang, as applicant merely contends that "the particles set forth in the Fang et al references may not necessarily and inherently provide a particle size distribution having a span value, by volume, as recited in the present claims," which

is not sufficient. The burden is on the applicant to provide clear evidence, not uncertain allegations.

(Point 10) does not address the rejections at hand.

Conclusion

6. Claims 1-7, 11-14, 17-20, and 23-24 are rejected.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph V. Micali whose telephone number is (571) 270-5906. The examiner can normally be reached on Monday through Friday, 7:30am to 5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry A. Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joseph V Micali/
Examiner, Art Unit 1793

/J.A. LORENGO/
Supervisory Patent Examiner, Art Unit 1793